

## Claims

1) A process for preparing a polyurethane dispersion, which comprises preparing the polyurethane prior to dispersing in the presence of an N-(cyclo)alkyl-  
5 pyrrolidone having a (cyclo)alkyl radical containing 2 to 6 carbon atoms.

10 2) The process according to claim 1, comprising the steps of

I. preparing a polyurethane in the presence of an N-(cyclo)alkylpyrrolidone by  
15 reacting

a) at least one polyfunctional isocyanate having 4 to 30 carbon atoms,

b) diols of which

15 b.1) 10 to 100 mol%, based on the total amount of diols (b), have a  
molecular weight of from 500 to 5000 and

20 b.2) 0 to 90 mol%, based on the total amount of diols (b), have a  
molecular weight of from 60 to 500 g/mol,

c) if appropriate further polyfunctional compounds, other than the diols  
(b), containing reactive groups which are alcoholic hydroxyl groups or  
primary or secondary amino groups and

25 d) monomers other than the monomers (a), (b) and (c), containing at  
least one isocyanate group or at least one isocyanato-reactive group,  
additionally carrying at least one hydrophilic group or one potentially  
hydrophilic group whereby the polyurethane is rendered dispersible in  
30 water,

to form a polyurethane and

35 II. subsequently dispersing the polyurethane in water

III. with the possible addition after or during step II, if appropriate, of  
polyamines.

40 3) The process according to claim 2, wherein as component (d) at least one  
hydroxycarboxylic acid is used.

- 4) The process according to claim 3, wherein as component (d) at least one dihydroxyalkylcarboxylic acid is used.
- 5) The process according to claim 3, wherein as component (d) at least one  $\alpha,\alpha$ -bis(hydroxymethyl)carboxylic acid is used.
- 6) The process according to claim 3, wherein as component (d) dimethylolbutyric acid and/or dimethylolpropionic acid are/is used.
- 10 7) The process according to claim 3, wherein as component (d) dimethylolpropionic acid is used.
- 8) The process according to any one of the preceding claims, wherein as components (d) both nonionic hydrophilic and ionic hydrophilic groups are used.
- 15 9) The process according to any one of the preceding claims, wherein the polyurethane is prepared in the presence of at least one cesium salt.
- 10) The process according to any one of the preceding claims, wherein the (cyclo)alkyl radical is cyclohexyl, ethyl, *iso*-propyl, n-propyl, n-butyl, *iso*-butyl, sec-butyl or *tert*-butyl.
- 20 11) The process according to any one of the preceding claims, wherein the (cyclo)alkyl radical is ethyl or n-butyl.
- 25 12) The process according to any one of the preceding claims, wherein the N-(cyclo)alkylpyrrolidone is N-ethylpyrrolidone.
- 30 13) The use of a polyurethane dispersion prepared according to any one of the preceding claims for coating or adhesively bonding wood, wood veneer, paper, paperboard, cardboard, textile, leather, nonwoven, plastics surfaces, glass, ceramic, mineral building materials, uncoated metals or coated metals.
- 35 14) The use of N-(cyclo)alkylpyrrolidones having a (cyclo)alkyl radical containing 2 to 6 carbon atoms in preparing polyurethanes.

New solvents in the preparation of polyurethane dispersions

**Abstract**

5 N-(Cyclo)alkylpyrrolidones as solvents for use in processes for preparing polyurethane dispersions.